

Amended patent claims:

1. A process for producing a product (1) having a structured surface (30c) for generating diffractive or refractive structures, in particular for generating microstructures (31, 32, 33, 34, 35, 36) in glass, at least comprising the steps of:

5 providing an auxiliary substrate (10, 20) having a structured surface (20a),

the structured surface (20a) of the auxiliary

10 substrate (10, 20) defining corresponding negative molds, and

applying a first layer (30) of a first material to the structured surface (20a).

15 2. The process as claimed in claim 1, which also includes removal of the auxiliary substrate (10, 20).

3. The process as claimed in one of the preceding claims, wherein the first material (30) comprises glass or a 20 material similar to glass.

4. The process as claimed in one of the preceding claims, wherein the step for applying the first layer (30) comprises a deposition operation.

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5. The process as claimed in one of the preceding claims, wherein the first material (30) is sputtered or evaporated in order to be deposited on the structured surface (20a) of the auxiliary substrate (10, 20).

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6. The process as claimed in one of the preceding claims, wherein the first layer (30) is applied by evaporation coating, in particular is deposited by means of plasma ion assisted deposition.

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7. The method as claimed in one of the preceding claims, wherein the structured surface (20a) of the auxiliary substrate (10, 20) defines a negative mold (21, 22, 23, 24) for optical lenses or channels.

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8. The process as claimed in one of the preceding claims, wherein the first layer (30) is planarized (30b).

9. The process as claimed in one of the preceding claims, wherein a product substrate (50) is applied.

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10. The process as claimed in one of the preceding claims, wherein a product substrate (50) comprising glass or a material similar to glass is applied.

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11. The process as claimed in one of the preceding claims, wherein a product substrate (50) is adhesively joined (41) to the first layer (30).

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12. The process as claimed in one of the preceding claims, wherein a product substrate (50) is anodically bonded (40) to the first layer (30).

30 13. The process as claimed in one of the preceding claims, wherein the auxiliary substrate comprises a self-

supporting carrier (10) formed from a second material, and the second material is structured directly.

14. The process as claimed in one of the preceding claims, 5 wherein the auxiliary substrate (10) is planarized prior to the structuring step.

15. The process as claimed in one of the preceding claims, 10 wherein the auxiliary substrate (10, 20) is at least partially etched away.

16. The process as claimed in one of the preceding claims, 15 wherein the auxiliary substrate comprises a carrier (10) made from a second material, a structuring layer (20) is applied to the carrier, and the structuring layer is structured.

17. The process as claimed in claim 16, wherein the 20 structuring layer (20) comprises a pre-structured film or foil (25).

18. The process as claimed in claim 16 or 17, wherein an 25 intermediate layer (15) is applied between the carrier (10) and the structuring layer (20).

19. The process as claimed in one of the preceding claims, 30 wherein a structuring layer (20) comprising a photoresist or gray scale resist is applied.

20. The process as claimed in one of the preceding claims, wherein the structuring step comprises a lithographic process or a mechanical pressing operation.

5 21. The process for producing a product (1) having a structured surface (30c), in particular for generating microstructures (31, 32, 33, 34, 35, 36) in glass, and in particular as claimed in one of the preceding claims, comprising at least the steps of:

10 providing a negative mask (10, 20) having a structured surface (20a), and  
depositing a first layer (30) of a first material on the negative mask in order to produce a positive impression (30c) of the structured surface (20a) of  
15 the negative mask in the first layer (30).

22. The process for producing a product (1) comprising a product substrate (50) having a structured surface (30c), in particular for generating microstructures (31, 32, 33, 34, 35, 36) in glass, and in particular as claimed in one of the preceding claims, comprising at least the steps of:

20 providing the product substrate (50), and  
depositing a first layer (30) of a first material, the first layer growing in the direction of the product  
25 substrate (50) with respect to the product which is to be produced.

30 23. An intermediate product, in particular producible by the process as claimed in one of the preceding claims, comprising

an auxiliary substrate (10, 20), and  
a first layer (30) of a first material joined to the  
auxiliary substrate (10, 20), the first layer (30)  
having a structured surface (30c) which faces the  
auxiliary substrate (10, 20), and the first layer (30)  
can be detached from the auxiliary substrate (10, 20)  
while retaining its structured surface (30c).

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24. A product (1) having a structured surface (30c),  
10 producible by the process as claimed in one of the  
preceding claims.

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25. A product (1) having a structured surface (30c), in  
particular producible by the process as claimed in one  
of the preceding claims, comprising  
a product substrate (50) made from a third material,  
a first layer (30) of a first material having a  
structured surface (30c), the first layer (30) being  
applied fixedly to the product substrate (50).

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26. The product (1) as claimed in one of the preceding  
product claims, wherein the product substrate (50) and  
the first layer (30) are transparent.

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27. The product (1) as claimed in one of the preceding  
product claims, wherein the first layer (30) and the  
product substrate (50) comprise glass or a material  
similar to glass.

28. The product (1) as claimed in one of the preceding product claims, wherein the first layer (30) comprises a layer produced by deposition.

5 29. The product (1) as claimed in one of the preceding product claims, wherein the first layer (30) comprises a layer produced by sputtering or evaporation.

10 30. The product (1) as claimed in one of the preceding product claims, wherein the first layer (30) is applied by evaporation coating, in particular is deposited by means of plasma ion assisted deposition.

15 31. The product (1) as claimed in one of the preceding product claims, wherein the structured surface (30c) of the first layer (30) defines optical lenses (31, 32) or channels.

20 32. The product (1) as claimed in one of the preceding product claims, wherein the first layer (30) is planarized (30b) on a side which is opposite from the structured surface.

25 33. The product (1) as claimed in one of the preceding product claims, wherein the first layer and the product substrate (50) are adhesively joined (41) to one another.

30 34. The product (1) as claimed in one of the preceding product claims, wherein the first layer (30) and the product substrate (50) are anodically bonded (40).